Most of the dwellings in Bang Chan flanked the canals that stretched away from the temple area. All houses were in sight of one or more other houses, if not standing side by side. Here and there they formed small hamlets where kinsmen tended to live in proximity. Around the houses were kitchen gardens and threshing floors, and behind them, the fields. Bananas grew abundantly; pineapples, mangoes, and other fruits occasionally. The canals were full of water-vegetables, cultivated or wild, while fish were plentiful. Water sources were the rain, kept in large jars; artificial ponds dug near the houses and fed from ground water; and the canals. No wells existed. The large tile roofs of the temple collected a good deal of rain-water which was available to anyone during the hot season when all water ran low.

General Nutritional Level

The population was physically well-formed with few physical deformities evident. There was little obesity or emaciation. The daily diet (cf. Hauck, et al.:passim) consisted of large quantities of rice, with small amounts of fish, meat, vegetables, fruits, spices, and eggs. Food at the not-infrequent festivals was rich in meat, eggs, and sugar. No milk was available except canned imports, and little was used. "Nevertheless, though caloric deficiency ('hollow hunger') was not prominent, over half of a sample of the population inspected medically had one or more signs of malnutrition. Even in a group chosen for research reasons for apparently good nutrition, about one in four had some such sign and in another group, selected for evidence of poor nutrition, two out of three persons had such."[2] The nutritional level in Bang Chan did not always correlate absolutely with economic level, for nutritionally one of the poorest families was found to be one of the best fed because the father did so much fishing and collecting of green canal vegetables. The change-over, some decades ago, from home pounding of rice to steam milling by most families had probably been a major factor in increasing nutritional deficiencies throughout the community.

2. Dr. H.M. Hauck, personal communication, 1959.

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462 Besides the work in rice-fields, women dug and cleaned [503] canals and ditches, mounded land, and fished in many ways, the [226] most laborious of which was plunging a heavy basket into the mud to catch burrowing fish. In the household chores, in which men shared to some extent, they carried water, cut and fetched wood, tended livestock, cultivated kitchen gardens, [501] pounded rice in mortars, and cleaned houses. Boats were rowed by paddling or sculled by standing and pushing a single large [354] oar. Cooking was time consuming. The low stoves were on the [352] ground or floor. Since there were no tables or chairs, one squatted two to four hours a day to cut or pound ingredients, [516] stir the curry, or wash the dishes.

868 The training of boys and girls for farm and household 561 work was thorough and started early. By 18 years of age, 461 boys and girls with few exceptions were experienced in every step of farming. Janlekha's chart (1955:82) indicates the progression (parenthetical additions are the present author's):

Age	Method	Kinds of farm work
6 - 7	not forced, but allowed or induced to work if they want to	light hauling, removal of weeds which have been turned over by harrowing
8 - 12	mild pressure	light hauling, removal of weeds which have been turned over by harrowing; some household work and help in the kitchen - girls only - (sometimes boys)
13 - 14	moderate pressure	hauling, weeding, buffalo-tending, transplanting, chicken-feeding, fishing, household work (boys and girls)
15 - 16	high pressure	all kinds of farm work, harrowing, harvesting, and uprooting - boys only - are started at this age.

872 Children worked in the fields before and after school
461 which, compulsory for all children aged eight to fourteen, was held from 9 a.m. to 3 p.m. five and one-half days a week. Vacations coincided with peak work seasons so children could help in the fields or at home.

221 Despite the availability of fish and of vegetables in
435 the canal, the highest cash outlays for family food occurred in this transplanting season. Several factors probably contributed to this: increased food energy needs because of long hours of work, venders again accessible because of high water, cash from sale of last year's crop still in hand, the convenience of cooked foods and snacks, and perhaps the need to replenish household supplies after the long drought, or after their depletion by a ceremony.

22
512 The two months of September and October during which the rice grew afforded some respite. People slept a little longer and breakfast was not prepared so early. The skilled cook might take over and could give more attention to food preparation. All who could, took the opportunity to visit
[illegible] and take trips. A few might go on a pilgrimage. Therefore,
20 in this season, all family members were less often together
22 at the evening meal. Fishing was a continuous occupation,
443 with some preserving and home craft. Jobs such as selling
456 food in the market were undertaken for ready cash; houses and equipment were built or repaired. Finally the threshing floor was prepared.

[illegible]
[illegible] High water caused time-consuming inconvenience only in earth-floored cottages where it was necessary to keep the rice stores and chickens dry, move the cook-stove, and either build plank walks or cook standing ankle deep in water.

243
221 By November, the earliest varieties of rice matured. Those who owned several rice fields could put at least one into an early type. Many persons, by then short of rice, were glad to be thus tided over. One grandmother divided her first harvest among her several long-since-independent married children; 2 tangs[1] of milled rice per family, 40 for herself.

The heroic labor of harvest occupied December, January, and February. Farmers raced against the all-too-fast lowering of the water in the canals, without which sheaves could
[illegible] not be moved and buyers could not come for the paddy. People worked all daylight hours in the fields, threshed far into
226 the night. At this time also many varieties of fish matured and men fished night after night. Just when the convenience
434 of purchased food was greatest, cash was exhausted. With
426 rice money in sight, venders might be generous with credit,
443 but they could navigate only the larger canals, so were not available to many.

000 There was an important psychological difference between

[illegible] 1. One tang equals 20 liters. Milled rice weighs about 16 kg. per tang.

There was an important psychological difference between the two work seasons. At planting time, people were anxious; at harvest they were happy. People saw cash just ahead, for the crop was now safe. Each host of a cooperative work party gave at least one big convivial feast, the best he could provide and even the hired laborers got a round of liquor. People joked more than usual at work. Two boat loads of workers were observed racing down a canal at 6 a.m., shouting and cheering, although they had probably worked long hours for days or weeks before. Everyone knew that a joyous season was at hand.

When the crop was in, the people rested, fished, and began to prepare for big ceremonies demanding organized work. Supplies of fish were needed for preserving or for feasts. Labor and engines were now available, and with water low, fishponds could be conveniently drained, and the fish on the muddy bottom caught. A pond might be drained two or three times a year, but timing was determined by the availability of equipment and workers and by the needs of the annual ceremonial cycle. One pot of fish was given to each helper at a cooperative pond-draining.

Most farmers sold their rice in February. Capital was invested in farm equipment, buffalo, housing and ceremonies. Debts were cleared if possible. Cash expenditures for food, which had declined progressively since the beginning of the rice year, reached the yearly minimum, mostly because people had ample time to fish. People also saved up their money if they were sponsoring a ceremony, ate lightly at home if they were going to one. Since school closed from March 15 to May 1, because of the heat, money was not given to children for snacks.

The land dried up and cracked, rainwater for drinking gave out, and some canals were reduced to mud. Cherished plants were kept alive by watering, but no new planting could be done. Buffalo, which at other seasons were confined and fed, now roamed the fields, nibbling stubble. Everyone was busy and happy. Ordinations, weddings, cremations, merit-making feasts and several big holidays came one after another. Of the four New Year's Days observed in Bang Chan, the Buddhist New Year, which because of the lunar calendar fell about mid-April, was the most important, being celebrated over two days with extensive offerings of food to the priests and with other activities. The official New Year's Day, January 1, and the traditional New Year's Day about November 1, had rather slight observances. Chinese New Year's, in February, was celebrated by the Chinese residents who presented a school teacher and their hamlet headmen each with a boiled chicken and a Chinese sweet. Lent officially closed the ceremonial season, but the advent of plowing-time slowed the pace considerably.

When the rains finally came, the rice year started again.

GENERAL DESCRIPTION OF FAMILY FARE IN BANG CHAN

261 701 As we turn to a detailed description of the family fare, we should like to point out that starvation was unknown in Bang Chan. Although much room remains for improvement in 731 diet, "hollow hunger" was uncommon. In the few times when disastrous flood destroyed the year's crop, the government was able to provide enough rice so that it need not be ra- 133 tioned. People still ate their fill. Even floods had their • 226 advantage: one could fish out the window. That gross caloric undernutrition was rare was borne out by examination of the 146 school children (Hauck, 1956). "On the average . . . Bang 145 Chan children could not be considered as markedly under- weight. Few were so thin that one could 'count their ribs' and still fewer would be considered plump by American 141 standards." In a random sample of village households that included about 10% of the population, the heaviest man weighed 69 kg. (151.8 pounds) and the heaviest woman 70 kg. (154 pounds). We noted no more than half a dozen adults who appeared to be "overweight." Most were middle aged or older, and none of them did strenuous field work.

Sources of Food

Home Production, Storage and Preservation

262 Rice. - Rice is an essential part of any Thai meal. 256 The majority of the rice farmers in Bang Chan had rice for 251 home consumption milled for them at Minburi. In general, they took their own paddy to the mill, and brought the resulting milled rice home, where it was stored in a box or mat-bin. Although, according to a recent survey (Goldsen and Ralis, 1957) nearly a third of the households owned a home rice mill, undermilled or home-pounded rice was not widely [26] used in Bang Chan. Information on this point was obtained for 333 of 336 "kitchen-unit"[1] households in the village. Of these 5 consumed home-milled rice only, 51 used home-milled rice in major part, 78 in minor part, and 199 not at all.

221 In households where home-milled rice was used, during 254 June enough would be pounded to last until harvest, at which time hands were sore and bleeding from the field work and 505 home pounding was impossible. At the time when data for the 256 present report were being gathered, most families took paddy to the mill when water in the canal was high enough so that it could be transported by boat. If a farmer on a subsidiary

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[252] 1. In some large houses, two related family groups lived together but maintained separate kitchens.

was given away fresh to selected kin and friends, including those who helped to butcher, and the remainder was salted and dried. Of this, 7 kg. were kept and 5 kg. sold. Moslems are forbidden to eat an animal with two or four legs which "dies," although eating dead locusts or fish is not forbidden. Some Moslems in Bang Chan reported offering dead animals to Buddhists in barter for other materials.

Oxen, a sign of prosperity, were bought as calves by the Moslems and fattened for meat, usually with a ceremony in mind. In 1955 (Goldsen and Ralis, 1957) only 5 householders in Bang Chan raised hogs, and 4 of these had 1 or 2 only. Moslems ate no pork. A permit from the district officer was necessary for slaughtering a buffalo or an ox but not for hogs. Natural deaths of such animals were supposed to be reported.

Poultry was not commonly used for food in Bang Chan. It was the poor man's "feast" food suitable for guests. One couple in the lowest income level killed one chicken or a duck once a year to provide the traditionally good meal for their cooperative harvest helpers. Others, better off, might serve chicken especially at men's dinners. Pigeons were raised for sale in the market by one Moslem family. In 1953-54, one person was trying to raise a few turkeys for sale, as word had reached Bang Chan that turkeys were in demand for foreigners' holiday dinners. By 1957 turkey-raising for cash was spreading, but some villagers objected to having them around "because they look like vultures and bring misfortune."

Various wild creatures were used for food whenever they were caught. Turtle curry was considered a great delicacy, but as turtles, which could be caught from May to February, brought a good price in Bangkok, experts usually sold their catch. Frogs and turtles were sometimes kept in a jar until needed. Eels, frogs, cobra and other snakes were used for curry. Field rats, available all year, were roasted.

Fish. - Next to rice, fish constituted the most abundant food in the diet in Bang Chan. Either fresh or preserved,[1] they were available throughout the year. Killing

1. According to observation in 1952-54, fish caught in excess of immediate needs were preserved for later use. Serpentheads ((1)plaa (3)chausaun), which are about 7 or 8 inches long, and pilot fish ((1)plaa (2)sa-(2)lid), about 4 or 5 inches long, were commonly salted and dried. Heads and tails were removed and the fish were split open and salted overnight. The following morning the fish were washed and spread on fiber trays in the sun to dry. Some excess fish might be dried at anytime of year, but larger quantities were done during the hot, dry season. The process was usually complete within a week.

Killing
fish was apparently regarded more lightly by many Buddhists than killing of larger animals, but fishing on (1)wan (4)phra, the weekly holy day, was forbidden. Fish were caught from the canal with nets, traps, spears and hooks. Some were trapped in trenches in the rice fields. Techniques varied with the varieties of fish mature and plentiful at different seasons.[1] Moreover, every house had a fish pond. It was usually the hole from which earth had been removed for mounding the home site, and was connected by a ditch to the canal. Fish were lured from the canal into the pond by clearing it of injurious undergrowth, planting appropriate fish-feeding plants, of

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Smaller fish were preserved as fermented fish. The fish with bones left in, were salted overnight. This product was called (1)plaa (1)raa. For fermented fish to be used as seasoning, in various dishes, the liquid was drained off, then the fish were washed and mixed with salt and specially prepared rice. This had been soaked overnight, fried and pounded. The mixture was allowed to ferment in a small jar for from 2 weeks to 2 or 3 months, depending on the product desired. Large bones were removed by putting the product through a colander before use. Fermented fish had the advantage that it could be eaten without further preparation, and the flavor was generally liked.

Small shrimp, which were caught in quantity during only about 3 weeks in February, were made into shrimp paste as follows: the shrimp were washed, mixed with salt and allowed to stand overnight. The liquid was drained off, and the shrimp were spread out on trays and exposed to the sun for a day or so. Larger ones might then be beaten to loosen the shells, which could be winnowed away. For very small shrimp, this step was omitted. The shrimp were then pounded thoroughly in a mortar, and stored in a jar for about a month before use. Very small fish were sometimes made into fish paste in the same way. The yield was about 2 kg. of the tannish or grayish colored shrimp paste from 4 baskets (4/5 tang) of shrimp. Shrimp paste or (2)ka-(2)pi was an essential ingredient of Thai hot dishes.

The liquid which was drained off from the mixture of fish or shrimp and salt in the first stage of preparing fermented fish or shrimp paste was used by some villagers to prepare (4)naam (1)plaa or fishsoy. The liquid was boiled with certain green leaves such as mango leaves, onion, garlic and salt for from 30 minutes to an hour, then it was strained. The resulting red-brown liquid was bottled and was ready for use as a condiment.

1. Sharp et al. (1953, pp. 185-196) described some common fishing techniques and listed 32 varieties of fish known to be found in Bang Chan in 1948-49.

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235 was slightly higher than that of chickens, averaging 155 eggs per laying duck.

178 231 Hogs: In 1949, two families were raising hogs which according to our observation did not seem to be well fed. When we returned to the village in 1952, not a single hog remained in Bangchan.

Fish

262 443 434 After rice, fish (and other marine animals) are by far the most important ingredient in the diet of Bangchan. More fish are bought from the outside than the very small amount that is exported from the village mainly by one or two very poor families who have availed themselves of this means of augmenting their income.

221 226 The villagers' annual cycle for fish-taking varies somewhat with the particular method used, and with the annual rice and ceremonial cycles: yet the maturation cycle of the principal types of fish is also a factor, and one which tends to give an overall orderliness to the annual cycle for fish in general. There is no time in the year when at least some fish are not available, nor is there any time in the year, even the busiest, when the family does not want fresh fish for its menu. For this reason, there is fishing the year round, at least in the form of the housewives simply setting nets in the canal and then tending them according to some schedule or whenever the noise of caught fish sloshing about in the water is heard. When a lull from the pressure of

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221 other activities permits, members of the family are likely
• 226 to be seen fishing.

The period of late December through February is the period in which the canal fish are mature and most delicious to eat. Notwithstanding that this is the busy harvest time, it is also the busiest catching period, because it is at this time that many of the more important varieties of marine animals mature. Shrimp, for example, is available for only about twenty days during January. While this period is correctly described as the rice harvest time for the community as a whole, almost all individual families are likely to have lulls of a few days between the maturation of one rice variety and another. Such lulls are devoted to intensive fishing.

There is less urgency in the "harvesting" of fish by pool-draining methods than there is in fish-catching. The first pool-draining might occur as early as February, or as late as May; a second and even a third draining might occur later in the year. There are biological factors underlying this, such as the presence on the banks and bases of the pools of a longer-lasting supply of plant food for the fish than is available in the canals, especially since the canals tend to recede more and more as the dry season progresses until, in the higher northern section of the village, they dry up completely well before the onset of the rainy season.

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243 per cent in 1949 to thirteen per cent in 1953 suggests that
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161 the problem of population pressure on land has become more
178 acute, although it may also indicate changes in the cost structure of rice production which will be discussed in Chapter VI.

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463 Concluding the discussion of this section, we may say that rice growing is the core of the occupational struc-
222 ture of Bangchan around which other occupations rotate. It
226 is not uncommon that one family has several occupations,
[243] and in addition to income from these most families get "free" food in the forms of fish and uncultivated aquatic plants. This is the principal reason why families with apparently no cash income still thrive.

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434 It is conceivable that in years of poor rice crop the family put more effort in the secondary occupations;
22
[136] when such an attempt does not work out well -- for example, no work for manual labor and no capital for trivial trade -- an effort is made to obtain subsistence directly from nature.

In any event, every family in the village is engaged
[136] in fishing in varying degree. It is because of this fact coupled with the fact that the village fish supply is decreasing that the problem of fish conservation is very important.

243 Finally, the dynamic nature of rice farming, with varying efforts on getting extra jobs and securing free food outside the farm depending upon the increase and decrease of the rice crop, suggests that the economy of any rice

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243 buffaloes heretofore undreamt of and will have to bear
231 the consequent burden of increased cost of producing rice.
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Some description of the homelots which constitute
311 almost five per cent of the land area of Bangchan has already
351 been given in the section on vegetation, Chapter II. From
[234] the standpoint of land utilization, functions of the homelot
[235] other than providing standing room for the living quarters
[244] may be mentioned as follows:
[245]
[226]

1. It provides space for threshing and for storage of rice and farm equipment including buffaloes.
2. It provides room for chicken or duck raising.
3. It provides land for a kitchen garden, and for fruit and vegetable growing.
4. It provides space for fish trapping by the draining method.

To serve these functions, homelots in any rice growing village, where the fields are submerged under water during the entire [illegible] of the rice plant, must be high above water level during the flood season, must be well drained, and must have pools with ample shade.

243
311 Rice land in its natural state does not meet these requirements for a homelot. In the first place its level is too low. Second, the impervious layer of clay characteristic of rice land does not permit soil drainage. To make a homelot out of rice land, it is necessary that the prospective site be mounded up to a level two or three feet higher than the level of the surrounding fields. The hole from which

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235 433 434 Of the 46 families covered by the survey, 23 or one-half raised ducks with an average annual production of 155 eggs per duck, and an average of 11.7 ducks per family raising them. Egg production for each of these families thus averaged about 1,200 per year. Of these, 1,350 were consumed by the family and 450 sold at the same price as chicken eggs. It was estimated, then, that from duck eggs alone, the average cash income in 1949 was about 150 baht per family raising ducks.

226 262 433 [434] After rice, fish were by far the most important ingredient in the diet of Bangchan. In contrast to poultry, however, fish did not constitute a source of cash income of the villagers. As a matter of fact, more fish were bought from the outside than the negligible amount that was exported from the village mainly by one or two very poor families who had availed themselves of this means of augmenting [435] their income. From our consumption study of 106 families in 1953, it was found that of an aggregate amount of 17,786 kilograms consumed by these families in the previous year 16,027 kilograms were caught by the families while 1,759 kilograms were bought at five baht per kilogram. The rate of fish production may thus be estimated at 151 kilograms annually per family, or 44,998 kilograms for the entire village.

262 244 433 The same consumption study shows that the 106 families consumed in 1953 a total of 18,402 kilograms of vegetables all of which were produced or acquired by the families.

*243 242 requires much additional hand labor and reduces the possibilities for mechanization to a minimum. On the other hand, the more labor intensive transplanting method would seem to be more suitable to a population pressure area like Thailand if it really gives as relatively higher a yield as it is claimed to give.

Farm equipment

*243 351 [235] [244] [245] [226] In Thai agriculture, it is very difficult to separate the farm from the home. In the chapter on the community it has already been indicated that the home lot not only is the living place for the farm family but also provides space for threshing and for storage of farm equipment, room for chicken raising, land for kitchen garden and for fruit and vegetable growing, and space for fish trapping by the draining method.

*243 351 422 In other words, all the material components of the farm, except the rice fields, are located or stored on the home lot. Here, items that are uniformly or frequently found include:

A. Household equipment

1. Buildings
2. Furniture
3. Bedding facilities
4. Kitchen accessories
5. Storing facilities
6. Lamps of various sizes
7. Ritual accessories

B. Farm equipment

1. Farm building: equipment and buffalo shed.
2. Implement: plow, harrow, yoke, roller, shovel, spade, hoe, weeding knife, noria, sickle, pitchfork, rake, broom, winnowing machine, wooden winnowing spitula, basket, mat bin, box bin, home-mill.

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[243] [434] [433] income and operator's labor earnings lies in the value of farm produce consumed by the family. Earlier, five kinds of produce were listed -- rice, fish, eggs, fruit and vegetables. For technical reasons, we consider only rice and eggs as products of the farm, rice being the primary crop and eggs the secondary crop. Fish is not considered a farm product because Bangchan villagers fish for consumption, not for sale. Besides, fishing is done by every resident of the village, farmers and non-farmers alike. It is thus more of a way of life than an economic enterprise. The same is true for fruit and vegetable growing which is done in a very small scale.

[235] [226] [244] [245]

If we agree on considering only rice and eggs as the products of the farm, it is not difficult to estimate the amount and value of farm produce consumed by the family for Bangchan operators can readily give a rather accurate information on their rates of consumption of these two products. Thus, under Bangchan condition the figure for operator's earnings is not as difficult to obtain as it appears to be the case among most American farms. The frequency distribution of operator's labor earnings of our 104 sample-farms is given in Table 48. It is seen that only 17 farms produced negative remuneration for the operator computed by this method as against 47 farms by the labor income method. As Professor Warren has said, of these two, labor earnings is a better measure of profits. It is especially so in Bangchan and perhaps in other agricultural regions in Southeast Asia

[171]

[TEXT CONTINUED ON PAGE 306]

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511 needs at least two work suits in each rice season, one during the field preparation and another during the harvesting season.

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511 Kerosine is used every day for lighting purposes. We do not include in this category kerosine which is used in the farm work; but that used with the pressure lamp in fishing by spearing during the night is included in the ordinary household expenses, for we do not consider fishing as a farm enterprise but as a routine activity participated in by all Bangchan residents, farmers and non-farmers alike.

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796
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[792]
[764]
[585] Contributions to neighbors is a necessary item of expense in the village. These are cash gifts made by invited guests to the sponsor of such rituals as ordination, cremation, marriage, topnotch-cutting, and teacher worship. These rituals usually take place during the dry season following harvesting when cash is abundant in the village and are always followed by feasts, not uncommonly in a series of two or three days. Since all these rituals necessitate the participation of the priests, they have to be arranged in consultation with the temple to avoid conflicting schedules. Although few rituals have been noted to be in conflict with one another, usually they are spread throughout the dry season and most people are able to attend rituals to which they are invited. In cases where they cannot attend in person, they are obliged by conventional requirement to send in their cash contributions. The standard cash contribution is 5 - 10 baht. Usually, a

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161
434 among these contributing factors is population pressure.

Disguised unemployment in the case of farm operators
*243
161 and their family workers and actual unemployment in case of
434 farm laborers indicates a condition of over-population in
464 Bangchan in the sense that a certain part of its population can be removed without materially reducing total production in the area.

178 In view of a continually decreasing supply of fish,
• 226 it may be said that the situation has reached the point where
433 it not only affects the per capita income of Bangchan resi-
262 dents but actually exerts pressure on means of subsistence. There are several indications of decreasing supply of fish and other marine animals in the village. First, it is the consensus of opinion gathered by our daily informal talk with villagers non of whom was found to hold a contrary view. Second, a passage in our 1948 log, "X is very lazy. Everybody here in Bangchan catches shrimps and makes his own shrimp paste. He alone does not catch shrimps even though he is among the poorest," indicates that purchase of shrimp paste was in 1948 an exception rather than a rule. In 1952, however, it was found that a total of 22.7 kilograms of shrimp paste consumed in a year by an average family, 6 kilograms, or more than a quarter, was purchased. In this latter year, 83 baht worth of fish and 54 baht of fish sauce were purchased by an average family in addition to shrimp paste as against negligible amounts for the same items in 1948 (we did not conduct a systematic consumption

178 survey in 1948, the "negligible amounts" comes from daily
226 talk with Bangchan residents). Third, several informants
433 testified that the amount of fish caught from the same pool
[262] by the draining method had been decreasing each year. One of these gave the following comparative figures for fish caught from the same pool on April 8 - 10, 1953 and on approximately the same time of the year in 1952 as follows:

Kind of Fish	Number Caught in 1953	Number Caught in 1952
Pla Salid	400	800
Pla Salad	100	200
Pla Kasong	50	120
Pla Chado	6	15
Pla Krai	1	--
Pla Doog	50	50
Pla Mor	20	25
Pla Chorn	150	300
Large turtle	5	3
Small turtle	7	3
Eel	5	5

Others also gave the 1953 figures, but could not itemize the 1952 figures; they only said that they "got much more than this year."

226 There had been until 1952 no positive program for
654 fish conservation; only negative measures have been taken, such as the Ministry of Agriculture's ordinance against fishing by certain methods at certain times of the year. In 1952, however, the Government began an extensive program of introducing a new variety of fish, Pla Mor Thed, into rural areas of Thailand. This new variety has been claimed to grow faster than the native varieties. While this program cannot as yet be appraised, a point of observation may be

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made that any program of fish raising in a closed pond, no matter how effective it may be, should not preclude the need for conservation of fish naturally existing in the open canals.

It has been pointed out that Bangchan operators produce 52 per cent of the things they need for ordinary consumption. Thus, rice growing may be seen as a farming-to-reduce-cost enterprise where maximization of profit ceases to be the primary motive of production. It has been pointed out also that rice growing is a losing concern to many operators (in terms of labor income and operator's labor earnings), but the loss has been compensated by the privilege to fish which is open to all village residents. Since the amount of fish caught constitutes the main and probably the only source of protein intake and at the same time a considerable share in the diet of villagers, continually decreasing supply of fish therefore underscores the immediate need for an effective program for fish conservation as a means to prevent the standard of living of the villagers from falling below the minimum level of subsistence.

Over-population in an area of limited job opportunities naturally creates an over supply of labor, which in turn results in low wages. This is further complicated by a wide variation of individual earnings from labor of from two thousand baht annually to almost nothing, the latter being the case of transient members of farm operating families.

APPENDIX F

• 226

LIST OF FISH AVAILABLE IN BANGCHAN

Thai name	English name	Season
Hoy karb	. . .	July - Sept.
Koy khong	. . .	all year
Kung	Prawn	July - Sept.
Kung foy	Shrimp	January
Pla boo	Goby	July - Dec.
Pla chado	. . .	all year
Pla chalad	. . .	" "
Pla chon	Serpentheadfish	" "
Pla dug	Silurid	" "
Pla jeed	Catfish	July - Feb.
Pla juad	. . .	July - Oct.
Pla kad	Fightingfish	July - Sept.
Pla kating	. . .	July - Oct.
Pla katunghew	. . .	July - Feb.
Pla khayaeng	. . .	July - Dec.
Pla khem	Needlefish	July - Feb.
Pla kod	. . .	July - Dec.
Pla kradi	Gourami	all year
Pla krai	Featherbackfish	July - Dec.
Pla krasong	. . .	all year
Pla krim	. . .	July - Dec.
Pla lai	Eel	all year
Pla lod	. . .	" "
Pla mor	Climbingfish	" "
Pla nua-on	Sheatfish	July - Dec.
Pla paeb	Minnow	July - Dec.
Pla salid	Pilotfish	all year
Pla siw	Carp	July - Dec.
Pla soy	. . .	July - Oct.
Pla tapian	Dace	July - Dec.
Taparb-nam	. . .	all year

(. . .) Not available.